

(57) Abstract:

This publication discloses a method and arrangement for determining the hardening depth of steel or other ferromagnetic substances without breaking the object being measured.

According to the invention, a varying magnetic field, which causes magnetic Barkhausen noise (MBN), is created in the measurement object with the aid of a magnetization coil 13. The varying magnetic field is regulated in such a way that the maximum force of the magnetic field does not exceed the coercitive force of the unhardened part of the measurement object. The MBN caused is measured with the aid of an MBN sensor. The measured signal is filtered and Fourier transformed. The signal in the frequency range is integrated over a suitable frequency band, in order to determine the value depicting the energy of the MBN. This value correlates with the hardening depth and on the basis of this value it is thus possible to determine the hardening depth.

(Figure 2)